

MEASUREMENT OF CREATING CORPORATE VALUE FOR SHAREHOLDERS – DEVELOPMENT OF MEASUREMENTS AND IMPROVEMENT OF MANAGEMENT COMPETENCE AND SKILLS

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Abstract: This article discusses the issues of increasing the perception of measurements for the creation of corporate value by introducing the concept of superior size, as well as relativization for e.g. evaluation of the benchmark. Consideration is also given to the connection between measurements used for creating added, market and income corporate value.

The application section contains surveys carried out on listed companies, leading in the creation and destruction of added value in manufacturing. The findings have helped to assess the medium-term correlation of changes in superior market added value with changes in company capitalization and the economic added value and income value relative to market value.

Key words: corporate value, creation of value, added value.

Introduction

Assessment in the creation of corporate value is used in order to motivate managers to implement strategies to maximize. The benefits of such actions are aimed at all company stakeholders, including in particular, owners. Although the increase in corporate value for owners – the basic topic of consideration in this article – should be assessed in the long term, however, motivation concerning these actions requires an assessment of the short and medium terms. This perspective is also relevant for financial analysts. They search for points of reference, trade measures, ways to extend the information capacity of classical measures for creating values available in specialist literature.

The theoretical-methodical purpose of the article is to indicate the ways of increasing the field of perception of measures for creating values by introducing the concept of superior size, as well as relativization for the assessment of reference groups (benchmark) and time. Consideration is also given to the connection between measurements used for creating added, market and income corporate value.

The purpose of application contains surveys carried out on listed companies, leading in the creation and destruction of added value in manufacturing. The findings of medium-term assessment have permitted confirmation of the hypothesis concerning the significant correlation of changes in superior market added value with changes in company capitalization. At the same time the absence of the economic correlation of added value and income value relative to market value has been demonstrated.

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The cognitive value, in particular the applicative value of the article, ideally fits into the educational process of financial personnel and the adapting of education to the requirements of corporate management. Of key importance is the preparation of the ability to independently perform an analysis in the creation of corporate value for comprehensive economic systems with the use of benchmarking, the search for measurement connections and correlations used for this purpose and the acquisition of greater knowledge and competence in order to broaden the field of perception for the purpose of performing one's own assessments.

Measures of created value

Value and the creation of value, which are the main indicator of corporate management strategy, have led to the creation and development of the concept of VBM – *Value Based Management*. According to A. Rappaport, this concept *should be* the standard when measuring and assessing company results [13, p. 3; 2, p. 18]. The measurement of corporate efficiency in terms of created value is often performed with the use of the following market measures: TSR – *Total Shareholder Return* and MVA – *Market Value Added* and the related internal assessment measure EVATM – *Economic Value Added*.

A dependency exists between the two latter measures. Economic Value Added is based around the economic profit model which is a value which, after covering the cost of capital, remains in the company [5, p. 136]. The sum of discounted future economic values added describes the MVA. In the general sense this is the difference between market corporate value and its book value (invested capital).

Apart from the collective group of entities acting in keeping with the concept of VBM, in the practice of assessing effectiveness and valuation it is income methods that dominate [12, pp. 286–301]; these primarily use the concept of DCF – *Discounted Cash Flow*. This concept perceives corporate value through the ability to create income in future periods in the form of cash flows: FCFE – *Free Cash Flows to Equity* (belonging to owners) and FCFE – *Free Cash Flows to the Firm* (belonging to all stakeholders). Their popularity is connected, amongst others, with the proven positive correlated value of DCF with the price of shares of listed companies in the long term [1, p. 90].

Relativization of the TSR measure

Initially, the TSR form covered two factors in the creation of value on the capital market – relative shareholder income from appreciation of rate expressed through the price of shares and corresponding dividends *DPS (Dividend per Share)*. The demanded expansion to include remaining payment to owners (*ACP – Additional Cash Payment*) has brought about a solution with the use of market

company capitalization and all payments to owners, also the questionable buyback of own shares [6, pp. 3–4].

Assessment made by multiplying the value requires relativization – comparison to other ongoing or expected rates of value creation. In the first case this means the meeting of the demand to withdraw from assessment in isolated form, and the optimization of TSR in terms of the reference group – the (market, branch, competition) benchmark. In the second case, this entails comparison to the minimum return, required by owners. Concerning this assessment A. Rappaport formulated the concept of TSR_N (*Excess Return, alpha indicator*) [13, p. 104], presented also more comprehensively as CAR – *Cumulative Abnormal Return* [3, pp. 781–794].

In both concepts of TSR_N the difference may be described – of either the true TSR_R and expected TSR_P (expressed in terms of equity), or TSR_{RX} for a given company and the TSR_{RB} benchmark.

$$TSR_N = TSR_R - TSR_P \quad ; \quad TSR_N = TSR_{RX} - TSR_{RB} \quad (1)$$

There is the question, however, whether the positive value of TSR_N only in the first instance is sufficient to formulate assessment about the creation of value for owners – one should add – in an expected and sufficient manner. This is where the demanded relativization of TSR in terms of the reference group – the benchmark – stems from. Its added value is an indication of attaining SSR – *Superior Shareholder Return* [8, pp. 69–84]. However, one should favour the opinion that the creation of value for shareholders also takes place in the event of attaining positive TSR_N , even if it is not superior in character.

Furthermore, superior TSR_N is a measure for assessing the creation of value for shareholders, thus rendering it objective. Through the assessment of company market capitalisation and Cash Distributions to Shareholders it characterizes not only the creation of values for shareholders, but also their wealth (*Shareholder Wealth*). This is market assessment with the use of an external measure of created value; rather than describing corporate results it focuses on expressing an opinion about them. For the purposes of motivation and the assessment of managers, it does not harmonize with the concept of delegating rights and responsibilities exclusively for controlled events [10, pp. 43–57].

Superior Market Value Added

The external MVA measure of created value describes the difference in corporate market value and the value of invested capital. This is both equity, as well as foreign capital, increased by so-called equivalents [14, pp. 112–117]. By adding these to the invested capital (this makes it necessary to also correct the shares) the level, from which the suppliers of capital will expect a given rate of return, will be indicated.

Positive MVA confirms the existence of an added bonus on the capital investment market. If the situation is the opposite one may refer to Market Value Lost (MVL). The added bonus belongs to all parties that financed the undertaking. From the point of view of company shareholders [4, p. 90, 176] the basis for the external assessment of effectiveness in the form of MVA_E (*Market Value Added to Equity*) is the difference in the Market Value of Equity MV_E and the value of invested equity IC_E^C . This will assume positive value when the *Return on Invested Equity Capital* ($ROIC_E^C$) exceeds its cost ECC_E^C (*Equity Capital Cost*).

$$MVA_E = MV_E - IC_E^C \quad ; \quad ROIC_E^C > ECC_E^C \quad \Rightarrow \quad MVA_E > 0 \quad (2)$$

In relation to MVA_E one may draw attention in a similar way to TSR – rather than describing corporate results the focus is on expressing an opinion about them (the difficulty of assessing managerial action and motivation), the need to list the shares of listed companies and the possibility of designation at company level only (rather than the business unit) [10, p. 50]. Furthermore, in MVA_E the benefits to shareholders cover only company market capitalization (without *Cash Distributions to Shareholders*), which is countered by – admittedly with equivalents – the book value of invested equity. It must also be stressed that this is an absolute measure, which hinders comparative assessment.

In order to meet its needs it is necessary to determine the differences in MVA_E values between given periods, which is described by the creation of values. As absolute values they continue to be difficult in terms of comparative assessment, however, referring them to the value of invested equity one may attain the MVA_{EW} relative measure.

$$MVA_{EW} = \frac{MVA_{Et} - MVA_{Et-1}}{IC_{Et-1}^C} \quad (3)$$

In turn, the introduction into the assessment of the expected growth in Market Value of Equity MV_E (company capitalisation) brings the possibility of determining the expected MVA_{EP} and superior MVA_{EN} in terms of real MVA_{ER} . In addition, this assessment is relative in terms of equity cost ECC_E^C , which reflects the expected, minimum rate of return (MV_E growth) [9, pp. 49–50].

$$MVA_{EP} = MV_{Et-1} \cdot (1 + ECC_i^C) - IC_{Et-1}^C \quad ; \quad MVA_{EN} = MVA_{ER} - MVA_{EP} \quad (4)$$

For the needs of performing comparative benchmark assessments, the value of MVA_{EN} may refer to the value of invested equity, thus obtaining a relative superior MVA_{ENW} .

$$MVA_{ENW} = \frac{MVA_{ENt}}{IC_{Et-1}^C} \quad (5)$$

Economic as opposed to market value added

MVA is an external measure of created value; its size depends on the market assessment of development capacity and the attainment of economic surplus in future periods, or more specifically – the expected, positive sum of updated Economic Added Value (EVA^{TM}) from future periods. The updating of value is performed with the use of the WACIC – *Weighted Average Cost of Invested Capital*.

The concept of EVA^{TM} defines the economic surplus or the difference in the adjusted operating result $NOPAT^C$ (corrected *Net Operating Profit After Taxes*) and the fee for invested equity with IC^C equivalents, or the difference of the $WACIC^C$ (*Weighted Average Cost of Invested Capital* with equivalents) and the $ROIC^C$ rate of return on this capital. The cost of invested capital is designated with the use of the CAPM (*Capital Asset Pricing Model*). Corrections to the operating result concern the acceptance of the concept of financing operations exclusively from equity, taking into account changes in values during the given period of the equivalents of invested capital and rejection of those positions in operating results which are not created from the application of operating shares (net shares) [11, pp. 53–95]. These approximate the corrected operating result to the concept of FCF cash flows.

From the point of view of shareholders, the assessment of economic value added (EVA_E) may be performed by guiding oneself with considerations concerning market value added (MVA_E).

$$EVA_E = NOPAT_t^C - IC_{Et-1}^C \cdot ECC_t^C \quad ; \quad EVA_E = \left(\frac{NOPAT_t^C}{IC_{Et-1}^C} - ECC_t^C \right) \cdot IC_{Et-1}^C \quad (6)$$

Correction of the operating result assumes financing exclusively from equity, for which reason, for the needs to determine the EVA_E in the place of $WACIC^C$, the ECC^C (*Equity Capital Cost*) is implemented; this is determined for equity through IC_E^C equivalents.

Relativization of EVA_E by referring it to the value of unvested capital, permits the performance of comparative assessments in time and, in terms of the benchmark (reference group), in a similar way as in the case of MVA_E . However, determining superior EVA_{EN} with consideration to the expected, minimum rate of return is not justified – this is because EVA_E contains this criterion. However, it is not verified by the market because EVA_E is an internal measure of created value. By making use of the relationship of MVA_E and EVA_E one may designate the corporate market value of MV_E (comments concerning the scope of the introduced corrections and equivalents remain current).

$$MV_E = IC_{Et-1}^C + \sum_{t=1}^n \frac{EVA_{Et}}{(1 + ECC_t^C)^t} + \frac{EVA_{En} \cdot (1 + q)}{(ECC_{Et}^C - q) \cdot (1 + ECC_t^C)^n} \quad (7)$$

The expanded form of the formula MV_E contains two components – the economic value for the period of prognosis and the economic residual value, in

terms of the Gordon model, with a constant rate of change (q) of the economic value of the forecast period.

Exemplification of the measurement of creating value

An illustration of the theoretic–cognitive investigations, constitute the results of the research presented in this article selectively. These were conducted in keeping with the defined methodological path, covering the presented methods and tools. A departure is the use of the surrogate EVATM in the form of Residual Income (RI). The essence of the concept of EVA constitutes the corrections of the operating results and the invested equity in the form of equivalents (which also cover off–balanced sheet items). Their rejection leads the general formula of EVATM to the concept of Residual Income of R. Hamilton and A. Marshall. On the other hand, corrections proposed by the creators of the EVATM concept are subject to criticism because of their lack of cohesion and unification. It was impossible to carry them out during testing because of limited access to detailed financial and accounting information.

The object of research was 20 listed companies¹ (the following sectors: energy, chemical industry, fuel and raw materials), whose shares are listed on the Warsaw Stock Exchange (GPW S.A. w Warszawie). These are the main creators and destroyers of value added, primarily (11/20) constituting the WIG–30 index. The test period covered the years 2009–2012, with references to 2008. During this period the analysed companies constituted 97% positive and 77% negative value added, generated by all listed companies as part of production activities (industry and energy – 177 companies).

In the entire group of companies significant differences between the expected MVA_{EP} and the real MVA_{ER} were particularly visible in 2011, with a decline in the following year, caused not only by a decrease in expectations, but also in growth in real values (See fig. 1.). The situation strongly differentiated in the sectors – the most favourable was in the raw materials and chemical industries. 2011 which was unfavourable impacted mostly standing in the fuels and raw materials industries, through the transmission of impulses from the global commodity exchange. Though caution by the market in the assessment of the creation of MVA_E by chemical sector companies is explicable, the placing of such considerable expectations – albeit diminishing – on the growth of the MVA_E of energy sector companies is curious – there is a growing difference in MVA_{EP} and MVA_{ER} .

¹ When identifying companies use is made of their so–called ticker (three–letter abbreviation). The requirement of cohesion of figure data and the maintenance of the required number of companies limits the scope of research to the medium–term.

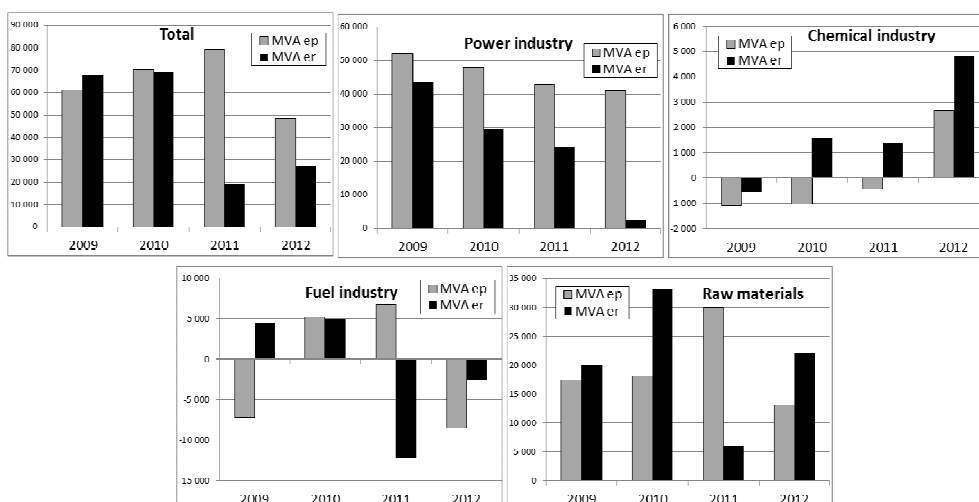


Figure 1. Market value added of analysed companies according to sector

Comments: MVA_{EP} – expected market value added; MVA_{ER} – true market value added.

Source: own work based on *notoria.pl*, *gpw.pl* and companies financial information.

The difference between the expected MVA_{EP} and the real MVA_{ER} is described by the superior MVA_{EN} , which may be relativized and used for assessment with the use of a benchmark. It may also be assessed in terms of changes in the market value of MV_E for given companies. In this manner differences emerge in the assessment of creating the value added of MVA_{ER} performed by the market in terms of the value added of expected MVA_{EP} and at the same time in reference to the company market value of MV_E – its capitalization.

For the last year of analysis (2012), in all analysed companies the MVA_{EN} value (in other words the market bonus in terms of expected, minimum return) was lower than the change (increase/decrease) in the MV_E value (See fig. 2.). In the set of negative values of both categories the assessment of the situation in 2012 ought to be negative (e.g. CEZ, PGE). In the set of positive values (e.g. KGH, PKN, PGN) the situation is not unequivocal. The positive MVA_{EN} value may arise with negative MVA_{ER} because of the lower value of MVA_{EP} than its own (e.g. PKN). Therefore there is a real loss of value added, but despite this assessment from the point of view of MVA_{EN} would be positive. This may be explained through the opinion of J.A. Knight, who recognises this situation as a type of bonus that balances out the opportunities of strong and weak companies [7]. Investors expected worse results than the ones attained by the company. They assess this event as relatively positive. However, this disrupts the external comparative assessment and the internal operation of motivation systems, discriminating companies that demonstrate positive MVA_{ER} values. One may look on the approach put forward by J.A. Knight in a favourable manner, however, the condition for positive assessment is MV_E growth at least at the same level as MVA_{EN} .

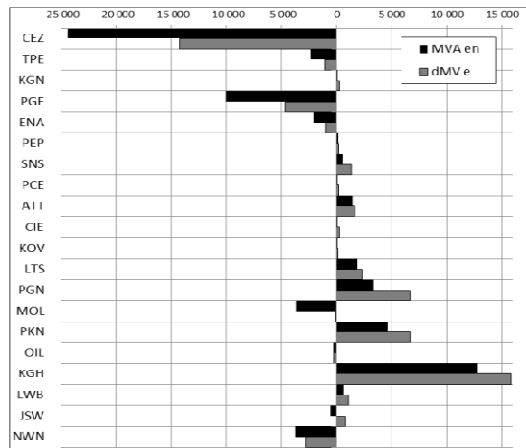


Figure 2. Superior Market Value Added (MVA_{EN}) and changes in Market Value (dMV_E) of the analysed companies in 2012

Source: same as Fig. 1.

By providing MVA_{EN} superior analysis with a dynamic dimension, one may assess changes in this category in terms of MV_E changes – not so much in absolute terms in individual periods, as rather in their general direction in time. Through analogy it is possible to make reference to MVA_{ER} and MV_E changes. In the other case, there is evidence of smaller compliance in the intensity of change, whilst in terms of higher correlated MVA_{EN} and MV_E changes, superior MVA_{EN} , in consideration of expectations and real value added, better describes the changes taking place on the market of assessing changes in the value of company capitalization (See fig. 3.).

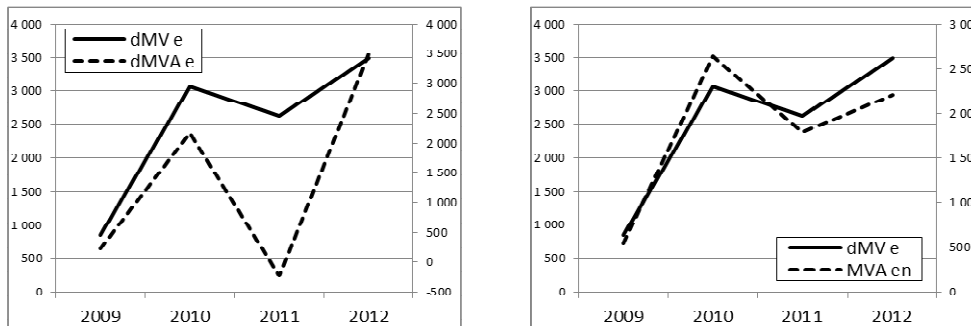


Figure 3. Changes in market value, added and superior, of the analysed companies (chemical sector)

Comments: dMV_E – change in market value, $dMVA_E$ – change in market value added, MVA_{EN} – superior market value added.

Source: same as Fig. 1.

Concerning the internal measure of created value – EVA_E surrogate in the form of RI_E – assessment is different from hitherto assessment. 2010 showed the

first signs in company assessment by the market – in place of expected growth, there was a small decrease in the value of company capitalization (See fig. 4.). The following year showed sudden revaluation. On the other hand, value added ($RI_E \sim EVA_E$) decreased considerably only in 2012 when there was growth in MV_E market value. Of course MV_E is created through assessing the future possibilities of companies; this may fail to harmonize with the assessment of current results which shape the value added of $RI_E \sim EVA_E$. These are real – and not expected as in the case of MV_E – and therefore questions may be asked about the possibility (foundations) of companies creating value added.

Comments concerning the lack of correlation of value added $RI_E \sim EVA_E$ and changes in market value MV_E have led to the performance of an additional assessment of companies with the use of the mentioned DCF model (income value)². This refers to future operating results and remains an internal assessment.

$$DCF = \sum_{t=1}^n \frac{FCFE_t}{(1+ECC_t)^t} + \frac{FCFE_n \cdot (1+q)}{(ECC_n - q) \cdot (1+ECC_n)^n} \quad (8)$$

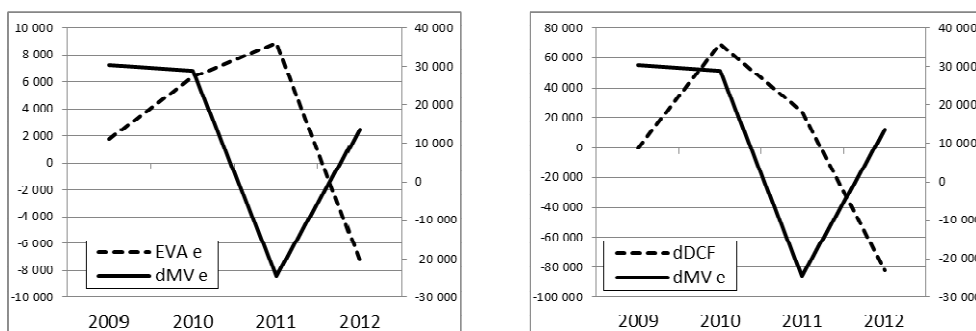


Figure 4. Added value and income value in reference to the market value of analysed companies

Comments: EVA_E – economic value added ($RI_E \sim EVA_E$), dDCF – change in income value, dMV_E – change in market value.

Source: same as Fig. 1.

Comparison of the curve relating to the $RI_E \sim EVA_E$ value added and the curve relating to the changes in the DCF income value demonstrates similarities (See fig. 4.). A lowering in the DCF income value, however, took place as early as 2011 and intensified in 2012. Indications of a deterioration in the situation of companies were generated through changes in the DCF income value earlier than $RI_E \sim EVA_E$ value added. Concerning both measures, 2012 assessment indicates a

² In order to make the results cohesive, measurements were made with the use of the DCF model, in a similar way as in the case of the MV_E model (with income value during the forecast period and residual value). For the purpose of forecasts use was made of the 3-year medium term.

worsening not only in the current situation ($RI_E \sim EVA_E$), but also in forecasts for the future (DCF); this is not reflected on change in the market value – there was growth in MV_E .

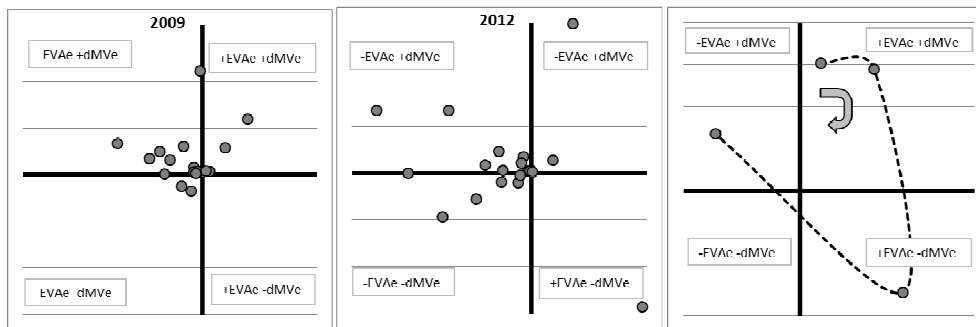


Figure 5. Scattering of entities (companies) and the central point path in terms of economic value added ($RI_E \sim EVA_E$) and changes in market value (dMV_E)

Source: same as Fig. 1.

One should add the identified increase in scattered objects – the analysed companies (See fig. 5.) – to the assessment of changes in $RI_E \sim EVA_E$ value added and MV_E market value. At the end of the analysis period they differ more clearly in terms of attained value added and changes in market value than at the beginning of the period. In the dynamic sense this movement of entities is described by means of the trajectory of value as a whole (central point), passing from quadrant ($+EVA_E; +\Delta MV_E$) to quadrant ($-EVA_E; +\Delta MV_E$).

Summary

The measurement of corporate efficiency in terms of created value is often performed with the use of the following market measures: TSR, MVA or EVA^{TM} . This has a tendency to broaden the field of perception by introducing the concept of superior size, as well as relativization for, amongst others, assessment in terms of benchmarking. Use should be made of links between measures in the creation of value added (economic and market), and market corporate value – the capital invested in the company. It is also helpful to refer to income methods in corporate assessment.

The findings of research carried out on listed companies gave a range of medium-term assessment conclusions. Their meaning is based on the advantage of these entities in the creation and destruction of added value in manufacturing. This summary contains the basic empirical conclusions drawn from theoretical and methodical considerations.

Measures of income value and economic value added express internal value; this does not harmonize in the group of analysed companies with external assessment, with the use of MV_E market value measures and MVA_E market value added, also superior MVA_{EN} . These two latter measures are long-term measures, as opposed to

the economic value added measure (relating to a given single period). On the other hand, however, MVA_E combines in itself committed capital and the sum of EVA_E . This means that there should be a closer correlation between MVA_E and EVA_E , even in the short-term. The difference in terms of time may also be the result of a lack in the short period of proven DCF positive correlation in income value and MV_E (price of shares).

One may expect that continuation in research in terms of a formulated path (extension of time sequences), will permit the verification of the hypothesis on the pre-emptive nature of signals stemming from external measures of created value (secondary) in terms of signals stemming from internal measures (primary).

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**POMIAR KREOWANIA WARTOŚCI PRZEDSIĘBIORSTWA DLA
AKCJONARIUSZY – ROZWÓJ METOD ORAZ DOSKONALENIE
KOMPETENCJI I UMIEJĘTNOŚCI ZARZĄDZAJĄCYCH**

Streszczenie: Artykuł porusza zagadnienia zwiększenia pola percepcji miar kreowania wartości przedsiębiorstwa przez wprowadzenie koncepcji wielkości nadmiarowej, jak również relatywizacji służącej m.in. ocenie względem benchmarku. Rozważono także związki miar kreowania wartości dodanej, rynkowej oraz dochodowej przedsiębiorstwa.

Część aplikacyjną wypełniają badania spółek giełdowych, wiodących w tworzeniu i destrukcji wartości dodanej w działalności produkcyjnej. Uzyskane wnioski pozwoliły na ocenę średnioterminową korelacji zmian nadmiarowej rynkowej wartości dodanej ze zmianami kapitalizacji spółek oraz ekonomicznej wartości dodanej i wartości dochodowej względem wartości rynkowej.

Słowa kluczowe: wartość przedsiębiorstwa, kreowanie wartości, wartość dodana.

公司为股东创造价值 — 测量的发展和改进的管理能力和技能的测量

摘要: 本文讨论了通过引入概念的优越的大小, 以及如评价基准的关系增加的度量, 创造企业的价值观念的问题。用来创建添加, 测量之间的连接也给予考虑市场和收入的企业价值。应用程序部分包含上市公司, 领先的创建和销毁的制造业增加值进行调查。调查结果有助评估中期 — 相关性的公司资本化和经济增加值和收益价值与市场价值的变化与优异的市场增加值的变化。

关键词: 企业价值、创造价值, 增加值。